

What is claimed is:

1. A process for producing an Fe-based sintered alloy valve seat comprising the steps of:

(a) using, as a raw material powder for forming a matrix, an Fe-based alloy powder comprising, in terms of weight percentage,

C: 0.5 to 1.5%,

Ni: 0.1 to 3%,

Mo: 0.5 to 3%,

Co: 3 to 8%,

Cr: 0.2 to 3%,

and a balance of Fe and inevitable impurities, and having an average particle size of 20 to 50 μm ; and using, as a raw material powder for forming a hard dispersion phase, a Co-based alloy powder comprising, on a weight percentage basis,

Mo: 20 to 32%,

Cr: 5 to 10%,

Si: 0.5 to 4%,

and a balance of Co and inevitable impurities, and having an average particle size of 20 to 50 μm ,

(b) conducting solid phase sintering, under vacuum conditions, of a pressed compact formed from a mixed powder generated by mixing said Co-based alloy powder into said Fe-based alloy powder in sufficient quantity to account for 25 to 35% by weight of a combined weight with said Fe-based alloy powder, and causing said Co, Cr and Si components of said Co-based alloy powder to diffuse and migrate into said matrix, and said Fe component of said Fe-based alloy powder to diffuse and migrate concurrently into said hard dispersion phase, thereby markedly improving adhesion of said hard dispersion

phase to said matrix, and forming, as a result, an Fe-based sintered alloy substrate with a porosity of 10 to 20%, and comprising, according to measurements performed using an X-ray microanalyzer (EPMA), an Fe-Co alloy matrix comprising, in terms of weight percentage,

C: 0.5 to 1.5%,

Ni: 0.1 to 3%,

Mo: 0.5 to 3%,

Co: 13 to 22%,

Cr: 1 to 5%,

Si: 0.1 to 1%,

and a balance of Fe and inevitable impurities, in which is uniformly distributed a hard dispersion phase of a Mo-Fe-Co alloy, having a composition comprising, in terms of weight percentage,

Fe: 20 to 30%,

Co: 13 to 22%,

Cr: 1 to 5%,

Si: 0.3 to 3%,

and a balance of Mo and inevitable impurities, and having a 2 phase mixed system of an Fe-Co alloy phase and a Mo-Co alloy phase, and

(c) infiltrating said Fe-based sintered alloy substrate with copper or a copper alloy.

2. A valve seat obtainable by the process as defined in claim 1.